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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,878

08/29/2006

Noriyuki Wakaki

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EXAMINER

SULLIVAN, DANIELLE D

ART UNIT

PAPER NUMBER

1616

NOTIFICATION DATE

DELIVERY MODE

05/14/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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offserv@bipc.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/578,878	<b>Applicant(s)</b> WAKAKI ET AL.	
	<b>Examiner</b> DANIELLE SULLIVAN	<b>Art Unit</b> 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 3,5 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/11/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Claims 1-14 are pending examination.

#### ***Information Disclosure Statement***

The information disclosure statement filed 5/11/2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The information disclosure statement filed 5/11/2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because JP 51-19133 is in Japanese without an English abstract. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

***Specification***

Claims 5 and 14 are objected to because of the following informalities: "O/W type emulsion" is an abbreviation and should be "oil-in-water type emulsion".  
Appropriate correction is required.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code on page 4, lines 10-11. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 6 recite a soil fumigant selected from D-D. However, it is unclear what the metes and bounds of the recitation are because the term is an abbreviation of the common name 1,3-dichloropropene (page 10, line 17).

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board

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of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 5 recites the broad recitation of a process of producing the material in claim 1 comprising mixing 10-85% of a soil fumigant whereas claim 1 restricts the material to comprising 60-85% of the soil fumigant which is the narrower statement of the range/limitation.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5 and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (EP 0426292).

### **Applicant's Invention**

Applicant claims a soil fumigant solid material containing a) 60-85% soil fumigant, b) 0.5-15% gelatin, c) 0-10% inorganic mineral, d) 1-15% of a polysaccharide

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that reacts with a divalent or higher valent metal salt thereby cause gelation and e) 0.5-20% water. Claim 4 limits d) to a water-soluble alginate salt, low methoxyl pectin and kappa-carrageenan.

Applicant claims a process of making the material comprising 1) producing an oil-in-water emulsion containing a) 10-85% soil fumigant by stirring an aqueous solution of a), b), c) and d), 2) producing a gelated material by reacting the emulsion with a divalent or higher valent metal salt, and 3) producing the product by drying the gelated material obtained in step 2). Claim 7 limits d) to 1-15% of the composition. Claim 8 limits d) to a water-soluble alginate salt, low methoxyl pectin and kappa-carrageenan. Claim 9 limits b) to 0.5-15% of the composition. Claim 10 limits c) to 0-10%. Claim 11 limits e) to 0.5-20%. Claims 12-14 claim the produce produced in steps 1), 2) and 3).

### **Determination of the scope and the content of the prior art**

#### **(MPEP 2141.01)**

Young et al. teach viscous fumigant compositions comprising thickeners selected from proteins, gums or pectins and inorganic thickeners which cross-link or gel in the presence of calcium (page 7, lines 1-6). Plant extracts such as carrageenan and pectin may be used and proteins include those that are water soluble (page 7, lines 11-13). Crosslinking thickeners include alginates which form semi-solid gels upon contact with calcium ions which is a soil additive (page 7, lines 40-56). The soil fumigant is selected from carbon disulfide precursors in as little as 0.1 to up to and beyond the limit of solubility in an emulsion or suspension (page 8, lines 20-25). The thickener can be stirred directly into the solution with a small amount of liquid into a solution or emulsion

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(page 8, lines 26-29). The thickener comprises 0.01-5% of the composition (page 9, lines 11-15). The composition may be dried (page 9, lines 39-40).

### **Ascertainment of the difference between the prior art and the claims**

#### **(MPEP 2141.02)**

Young et al. do not envisage a specific composition comprising a) 60-85% soil fumigant, b) 0.5-15% gelatin, c) 0-10% inorganic mineral, d) 1-15% of a polysaccharide that reacts with a divalent or higher valent metal salt thereby cause gelation and e) 0.5-20% water. Young et al. do not teach specific amounts of soil fumigant and water. In view of In re Aller, Lacey, and Hall, 105 USPQ 233 (C.C.P.A. 1955), "change in concentration is not patentable modification, however, such changes may impart patentability to process if ranges claimed produce new and unexpected results". Since Young et al. disclose the invention as being used for the same purpose and only lack in specifying the amounts obtained present claims are prima facie obvious.

### **Finding of prima facie obviousness**

#### **Rationale and Motivation (MPEP 2142-2143)**

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Young et al. to include adjusting the amounts of soil fumigant, gelatin, polysaccharide and water. One of ordinary skill in the art would have been motivated by routine optimization to adjust the concentrations in order to change formulation properties. First, Young et al. teach the fumigant can comprise as little as 0.1 to up to and beyond the limit of solubility in an emulsion or suspension. Second,

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Young et al. teach thickeners selected from gelatin and polysaccharides may comprise 0.01-5% of the composition. Furthermore, Young et al. teach that the formulation may be dried or applied as an emulsion. Therefore, the water content of the formulation may be optimized to more or less water in order to manipulate the viscosity of the formulation.

Claims 2, 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (EP 0426292) in view of Imai et al. (5,846,904).

#### **Applicant's Invention**

Applicant claims a composition as addressed in above 103 rejection. Claim 2 limits the soil fumigant to a compound having a boiling point of 40-70 degrees Celsius. Claims 3 and 6 specify the fumigant as being selected from chloropicrin, D-D (1,3-dichloropropene) and ally isothiocyanate.

#### **Determination of the scope and the content of the prior art**

##### **(MPEP 2141.01)**

The teachings of Young et al. are addressed in the above 103 rejection.

#### **Ascertainment of the difference between the prior art and the claims**

##### **(MPEP 2141.02)**

Young et al. do not teach the specific fumigants. It is for this reason that Imai et al. is joined.

Imai et al. teach soil fumigant preparations comprising a fumigant selected from chloropicrin, 1,3-dichloropropene and methyl isothiocyanate (column 2, lines 15-19).



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Imai et al. teach that since the fumigants have adverse health risks, the solidification of these compounds to make their application easier is preferred (column 1, lines 10-30).

Even though the fumigants taught by Imai et al. are not carbon disulfide precursor fumigants, nevertheless, in view of In re Susi, 169 USPQ 423 (C.C.P.A. 1971), the combination, for the same purpose, of one additive explicitly disclosed in the prior art and another suggested by the prior art is at least prima facie obvious. Hence, combining soil fumigants selected from chloropicrin, 1,3-dichloropropene and methyl isothiocyanate with carbon disulfide precursor fumigants is at least prima facie obvious.

Furthermore, in view of KSR International Co. v. Teleflex Inc., 550 U.S. 82 USPQ2d at 1396 (2007), known manipulation in one field of endeavor may prompt variations of it for use in either the same field based on design incentives or other market forces if the variations are predictable. Hence, combining the compounds of Imai et al. into the formulation disclosed by Young et al. would have been prima facie obvious since the solidification of the fumigants makes them less toxic to those that apply them to the soil.

### **Finding of prima facie obviousness**

#### **Rationale and Motivation (MPEP 2142-2143)**

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Imai et al. and Young et al. to further include a fumigant selected from chloropicrin, 1,3-dichloropropene and methyl isothiocyanate. One would have been motivated to formulate viscous compositions with the fumigants

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chloropicrin, 1,3-dichloropropene or methyl isothiocyanate because Imai et al. teach that solid forms of these compounds make their application easier

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danielle Sullivan whose telephone number is (571) 270-3285. The examiner can normally be reached on 7:30 AM - 5:00 PM Mon-Thur EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Danielle Sullivan  
Patent Examiner  
Art Unit 1616

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/Johann R. Richter/

Supervisory Patent Examiner, Art Unit 1616